J&E Hall International

Installation & Service Manual

Commercial Condensing Units
Medium & Low Temperature Application

Fusion

CE

Contents

Nomenclature 3

Standard Product Configuration 3

Specifications
- General Data 4
- Dimensional Drawings for Units 5-6
- Performance Data: Medium Temperature 7
- Performance Data: Low Temperature 8

Electrical
- Wiring Diagrams 9-12

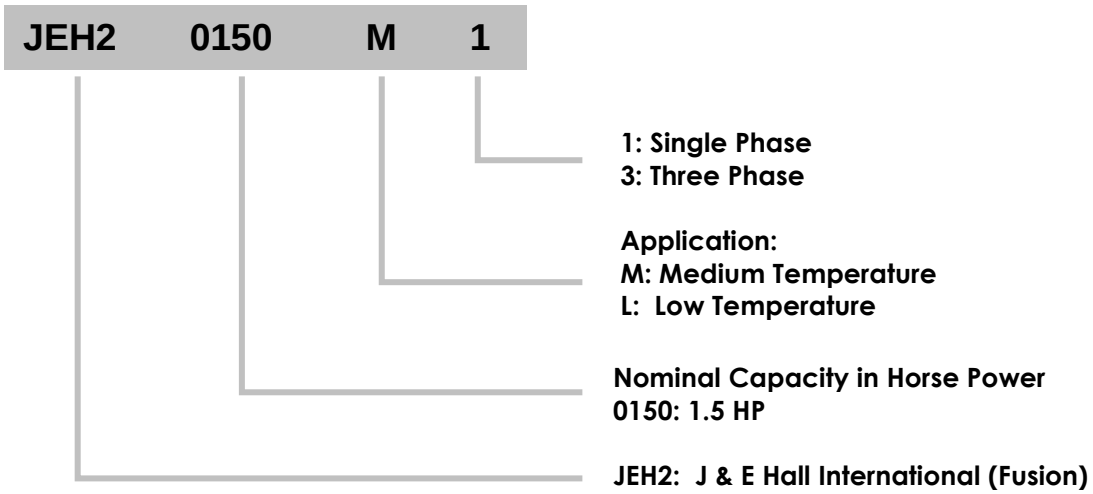
Health & Safety
- General Information 13

Installation
- Unit Site Location 14
- Installation Clearances 15
- Field Piping 15
- Leak Detection 16
- Pressure Testing 16
- Safety Pressure Switch Settings 16
- High Pressure Safety 16
- Low Pressure Safety 16
- Vacuum - Moisture Removal 17

Service & Maintenance 18

Technical Information
- Fan Speed Controller 19
- Dual Pressure Switch 20

Nomenclature



Standard product configuration

Series 2 / 3/ 4

- IP54 rated control panel
- Combined mains isolator/MCB/overload
- Maneurop Hermetic compressor
- Compressor solder connections
- Compressor contactor
- Liquid receiver with fusible plug
- Drier
- Sight glass
- Oil separator and discharge non return valve on low temperature models
- Crankcase heater
- Manual high & auto low pressure safety switch with Gomax flexible hoses
- Acoustic lining
- Compressor jacket
- Pressure actuated fan speed controller

Specifications

General Data

Model	Compressor			Airflow	Fan Motors		Connections		Receiver Vol.	Dry Weight	Noise Level
	Type	MCC(A)	LRA(A)	m³/hr	No.	FLC (A)	Suction	Liquid	Litres	Kgs	Db(A) *
JEH2-0150-M-1	MTZ18-5VM	10.0	40.0	3041	1	0.6	1/2	3/8	4.2	82	37.0
JEH2-0150-M-3	MTZ18-4VM	5.0	20.0	3041	1	0.6	1/2	3/8	4.2	89	37.0
JEH2-0225-M-1	MTZ28-5VM	20.0	51.0	2617	1	0.6	1/2	3/8	4.2	89	36.0
JEH2-0225-M-3	MTZ28-4VM	7.5	23.0	2617	1	0.6	1/2	3/8	4.2	89	36.0
JEH2-0300-M-1	MTZ36-5VM	22.0	60.0	2617	1	0.6	5/8	3/8	4.2	89	37.0
JEH2-0300-M-3	MTZ36-4VM	9.0	30.0	2617	1	0.6	5/8	3/8	4.2	89	37.0
JEH2-0400-M-3	MTZ50-4VM	12.0	42.0	6133	1	1.1	7/8	1/2	7.1	120	36.0
JEH2-0500-M-3	MTZ64-4VM	15.0	67.0	6133	1	1.1	7/8	1/2	7.1	120	40.0
JEH2-0600-M-3	MTZ72-4VM	15.5	80.0	5165	1	1.1	7/8	1/2	7.1	126	40.0
JEH2-0675-M-3	MTZ81-4VM	19.0	80.0	5165	1	1.1	1 1/8	1/2	7.1	126	42.0
JEH2-0825-M-3	MTZ100-4VM	22.0	90.0	6375	2	1.6	1 1/8	1/2	14	204	42.0
JEH2-1000-M-3	MTZ125-4VM	27.0	105.0	6375	2	1.6	1 1/8	1/2	14	205	42.0
JEH2-0175-L-1	NTZ48-5VM	11.0	37.0	3041	1	0.6	5/8	3/8	4.2	86	35.0
JEH2-0175-L-3	NTZ48-4VM	4.8	16.0	3041	1	0.6	5/8	3/8	4.2	86	35.0
JEH2-0225-L-1	NTZ68-5VM	17.0	53.0	2617	1	0.6	5/8	3/8	4.2	92	38.0
JEH2-0225-L-3	NTZ68-4VM	8.4	25.0	2617	1	0.6	5/8	3/8	4.2	92	38.0
JEH2-0350-L-3	NTZ96-4VM	10.1	32.0	6133	1	1.1	7/8	1/2	7.1	125	38.0
JEH2-0400-L-3	NTZ136-4VM	14.3	51.0	6133	1	1.1	1 1/8	1/2	7.1	125	33.0
JEH2-0725-L-3	NTZ215-4VM	22.3	74.0	6375	2	1.6	1 1/8	1/2	14	203	41.0
JEH2-0825-L-3	NTZ271-4VM	27.0	96.0	6375	2	1.6	1 1/8	1/2	14	205	40.0

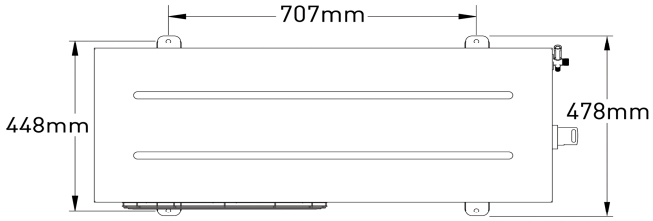
* Noise levels given are sound pressure @10m free field

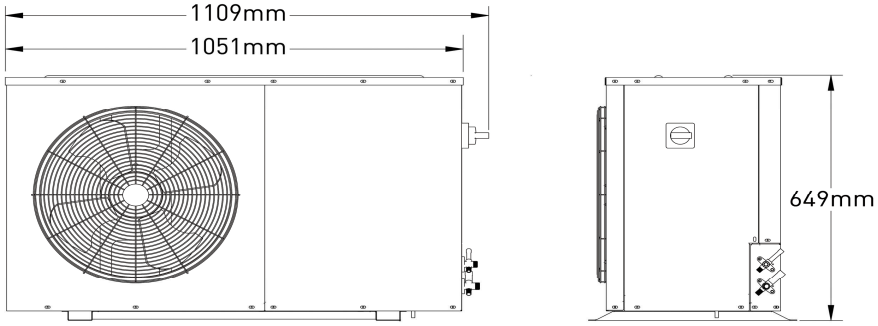
Model	Overall Dimensions (mm)			Mounting Dimensions (mm)	
	W	D	H	W	D
JEH2-0150-M-1	1109	478	649	707	448
JEH2-0150-M-3	1109	478	649	707	448
JEH2-0225-M-1	1109	478	649	707	448
JEH2-0225-M-3	1109	478	649	707	448
JEH2-0300-M-1	1109	478	649	707	448
JEH2-0300-M-3	1109	478	649	707	448
JEH2-0400-M-3	1335	529	884	946	500
JEH2-0500-M-3	1335	529	884	946	500
JEH2-0600-M-3	1335	529	884	946	500
JEH2-0675-M-3	1335	529	884	946	500
JEH2-0825-M-3	1258	590	1436	812	560
JEH2-1000-M-3	1258	590	1436	812	560
JEH2-0175-L-1	1109	478	649	707	448
JEH2-0175-L-3	1109	478	649	707	448
JEH2-0225-L-1	1109	478	649	707	448
JEH2-0225-L-3	1109	478	649	707	448
JEH2-0350-L-3	1335	529	884	946	500
JEH2-0400-L-3	1335	529	884	946	500
JEH2-0725-L-3	1258	590	1436	812	560
JEH2-0825-L-3	1258	590	1436	812	560

Dimensional drawings

JEH2-0150M1, JEH2-0150M3, JEH2-0225M1, JEH2-0225M3, JEH2-0300M1, JEH2-0300M3, JEH2-0175L1, JEH2-0175L3, JEH2-0225L1, JEH2-0225L3

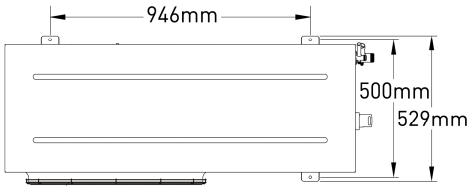
Series 2

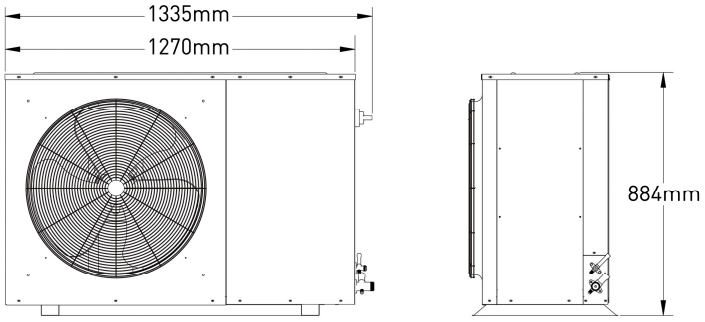




JEH2-0400M3, JEH2-0500M3, JEH2-0600M3, JEH2-0675M3, JEH2-0350L3, JEH2-0400L3

Series 3

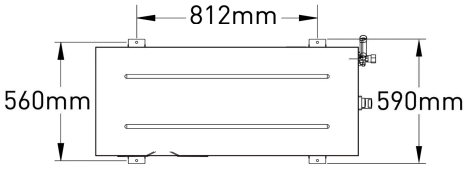


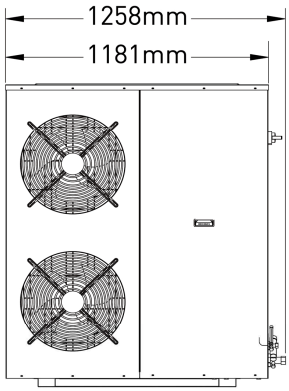


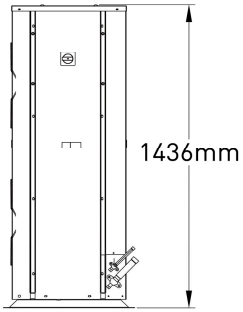
Dimensional drawings

JEH2-0725L3, JEH2-0825M3, JEH2-0825M3, JEH2-1000M3

Series 4







Performance data

Medium Temperature

			Cooling Capacity (Watts)										Absorbed Power (Watts)									
Unit Model	HP	TE / TA	-45	-40	-35	-30	-25	-20	-15	-10	-5	0	-45	-40	-35	-30	-25	-20	-15	-10	-5	0
JEH2-0150-M-1&3 R404A	1.5	27	-	-	-	649	962	1338	1781	2287	2860	3496	-	-	-	853	945	1040	1137	1237	1339	1444
		32	-	-	-	558	837	1180	1589	2062	2601	3204	-	-	-	856	959	1063	1169	1276	1385	1495
		38	-	-	-	431	679	987	1355	1783	2271	2819	-	-	-	865	973	1084	1197	1313	1431	1552
JEH2-0225-M-1&3 R404A	2.25	27	-	-	-	1172	1722	2341	3031	3790	4620	5519	-	-	-	1189	1394	1597	1799	1999	2198	2395
		32	-	-	-	977	1491	2074	2728	3451	4245	5108	-	-	-	1197	1409	1621	1831	2041	2249	2457
		38	-	-	-	819	1293	1826	2420	3073	3787	4560	-	-	-	1199	1418	1637	1859	2081	2306	2531
JEH2-0300-M-1&3 R404A	3	27	-	-	-	1681	2306	3036	3871	4811	5856	7006	-	-	-	1689	1936	2193	2460	2737	3024	3321
		32	-	-	-	1524	2120	2815	3611	4506	5502	6597	-	-	-	1716	1957	2213	2484	2770	3071	3387
		38	-	-	-	1281	1869	2546	3314	4171	5119	6156	-	-	-	1787	2015	2262	2530	2817	3125	3452
JEH2-0400-M-3 R404A	4	27	-	-	-	2313	3247	4366	5670	7159	8833	10692	-	-	-	2307	2616	2927	3240	3555	3872	4191
		32	-	-	-	2061	2900	3924	5133	6527	8106	9870	-	-	-	2373	2686	3004	3327	3655	3988	4326
		38	-	-	-	1719	2482	3409	4502	5759	7182	8769	-	-	-	2408	2731	3064	3407	3760	4123	4496
JEH2-0500-M-3 R404A	5	27	-	-	-	3220	4286	5556	7032	8712	10598	12688	-	-	-	2693	3149	3610	4076	4547	5023	5504
		32	-	-	-	2885	3862	5043	6430	8021	9818	11819	-	-	-	2818	3265	3722	4189	4666	5153	5650
		38	-	-	-	2393	3347	4466	5750	7199	8813	10592	-	-	-	2847	3309	3786	4278	4785	5307	5844
JEH2-0600-M-3 R404A	6	27	-	-	-	3326	4604	6076	7744	9606	11664	13916	-	-	-	3053	3517	4001	4505	5029	5573	6137
		32	-	-	-	2979	4181	5568	7140	8897	10839	12966	-	-	-	3147	3608	4093	4604	5139	5700	6285
		38	-	-	-	2471	3635	4943	6397	7995	9739	11627	-	-	-	3222	3680	4173	4701	5264	5862	6495
JEH2-0675-M-3 R404A	6.75	27	-	-	-	3656	5119	6756	8569	10556	12719	15056	-	-	-	3242	3840	4447	5065	5692	6330	6977
		32	-	-	-	3172	4593	6164	7885	9756	11777	13948	-	-	-	3279	3911	4548	5190	5837	6489	7146
		38	-	-	-	2694	4060	5546	7152	8878	10724	12690	-	-	-	3453	4047	4666	5310	5979	6673	7392
JEH2-0825-M-3 R404A	8.25	27	-	-	-	3832	5544	7467	9599	11942	14494	17257	-	-	-	4227	4916	5601	6282	6959	7632	8301
		32	-	-	-	3322	4981	6816	8825	11010	13369	15904	-	-	-	4340	5013	5696	6389	7092	7805	8528
		38	-	-	-	2809	4348	6043	7892	9897	12056	14371	-	-	-	4504	5148	5817	6511	7230	7974	8743
JEH2-1000-M-3 R404A	10	27	-	-	-	5786	7708	9811	12093	14556	17198	20021	-	-	-	5365	6158	7000	7893	8835	9828	10870
		32	-	-	-	4952	6931	9020	11219	13528	15947	18476	-	-	-	5504	6286	7127	8029	8990	10012	11093
		38	-	-	-	4351	6154	8073	10106	12255	14518	16897	-	-	-	5627	6424	7281	8198	9175	10212	11309

TE: Evaporating Temperature (ºC)

TA: Ambient Temperature (ºC)

Rating Condition: Superheat 10K, Sub cooling 0K

All duties are +/- 10%

Performance data

Low Temperature

			Cooling Capacity (Watts)										Absorbed Power (Watts)									
Unit Model	HP	TE / TA	-45	-40	-35	-30	-25	-20	-15	-10	-5	0	-45	-40	-35	-30	-25	-20	-15	-10	-5	0
JEH2-0175-L-1&3 R404A	1.75	27	455	738	1051	1394	1767	2170	-	-	-	-	513	720	937	1164	1401	1648	-	-	-	-
		32	363	643	947	1277	1631	2011	-	-	-	-	551	756	971	1196	1431	1676	-	-	-	-
		38	-	492	800	1132	1490	1872	-	-	-	-	-	793	995	1212	1444	1691	-	-	-	-
JEH2-0225-L-1&3 R404A	2.25	27	829	1253	1718	2222	2767	3351	-	-	-	-	1147	1348	1578	1839	2130	2451	-	-	-	-
		32	762	1139	1567	2044	2572	3149	-	-	-	-	1248	1443	1667	1922	2206	2521	-	-	-	-
		38	-	1017	1410	1868	2391	2979	-	-	-	-	-	1449	1698	1955	2245	2561	-	-	-	-
JEH2-0350-L-3 R404A	3.5	27	996	1506	2141	2901	3786	4796	-	-	-	-	1298	1621	1953	2296	2648	3011	-	-	-	-
		32	790	1252	1845	2567	3420	4402	-	-	-	-	1363	1687	2021	2365	2719	3083	-	-	-	-
		38	-	1080	1603	2272	3085	4044	-	-	-	-	-	1449	1689	1955	2245	2561	-	-	-	-
JEH2-0400-L-3 R404A	4	27	1629	2354	3200	4165	5251	6456	-	-	-	-	2097	2554	3047	3574	4137	4734	-	-	-	-
		32	1347	2020	2824	3757	4821	6014	-	-	-	-	2109	2567	3065	3603	4181	4799	-	-	-	-
		38	-	1749	2495	3396	4452	5663	-	-	-	-	-	2578	3079	3625	4216	4852	-	-	-	-
JEH2-0725-L-3 R404A	7.25	27	2363	3485	4717	6059	7511	9073	-	-	-	-	2768	3454	4220	5066	5992	6998	-	-	-	-
		32	2025	3070	4244	5549	6983	8548	-	-	-	-	2803	3497	4272	5126	6061	7075	-	-	-	-
		38	-	2563	3716	5014	6457	8045	-	-	-	-	-	3551	4318	5169	6106	7127	-	-	-	-
JEH2-0825-L-3 R404A	8.25	27	3293	4813	6469	8259	10185	12245	-	-	-	-	3967	4796	5726	6755	7885	9114	-	-	-	-
		32	2890	4276	5818	7514	9366	11372	-	-	-	-	4037	4868	5805	6846	7993	9244	-	-	-	-
		38	-	3713	5111	6694	8462	10415	-	-	-	-	-	4931	5877	6932	8098	9373	-	-	-	-

TE: Evaporating Temperature (ºC)

TA: Ambient Temperature (ºC)

Rating Codition: Superheat 10K, Sub cooling 0K

All duties are +/- 10%

Important Note:

On some applications the use of a Suction Accumulator may be required.

Warnings:

1. The use of an expansion valve with maximum operating pressure (MOP) or a starting regulator is compulsory.
2. Use only R404a specified components (e.g. filter drier, TXV).
3. The factory fitted crankcase heater must be permanently energized (self-regulating PTC).

Source: Maneurop

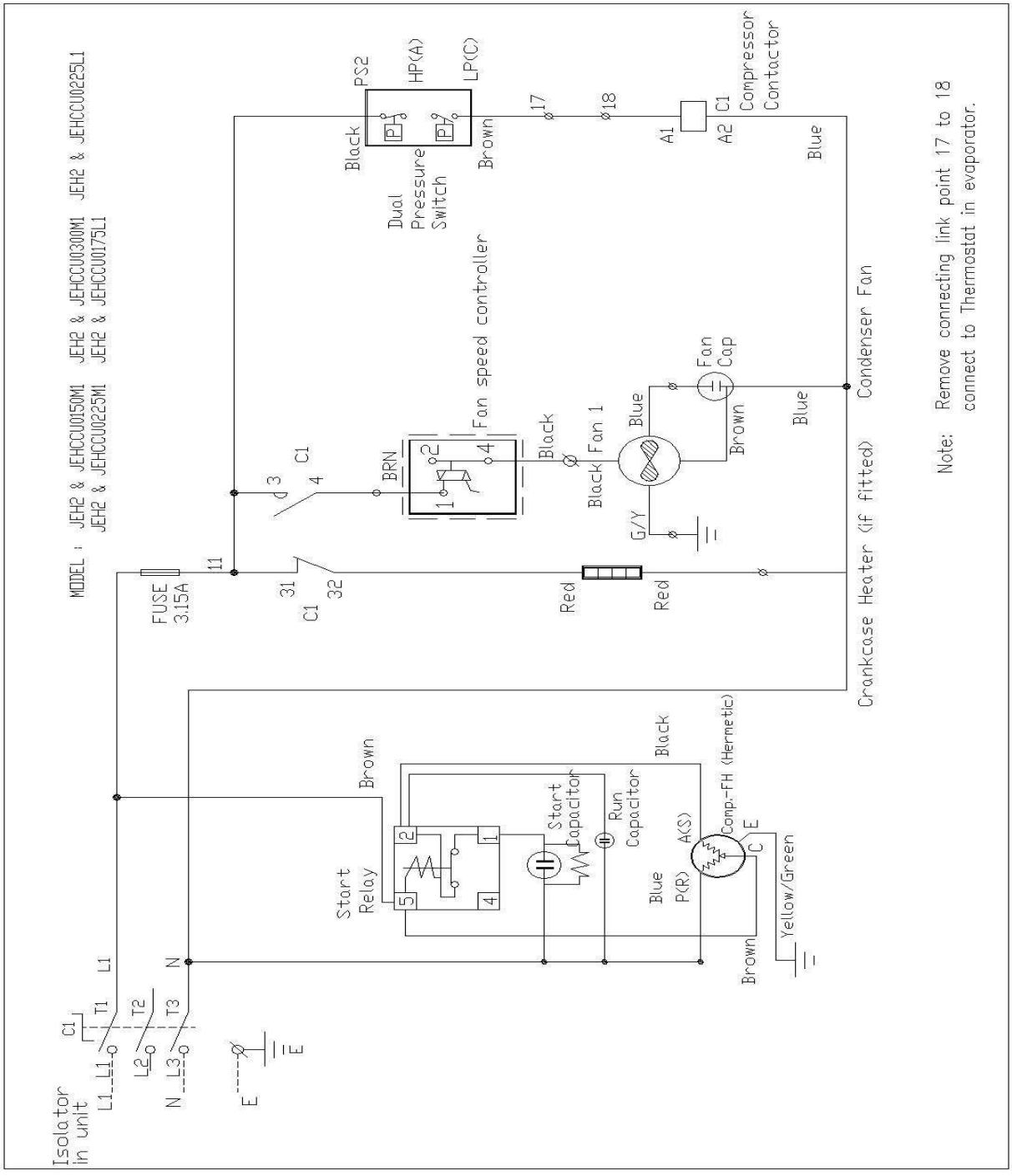
Electrical

Important Note:

All wiring and connections to the condensing unit must be made in accordance with all local codes of practice

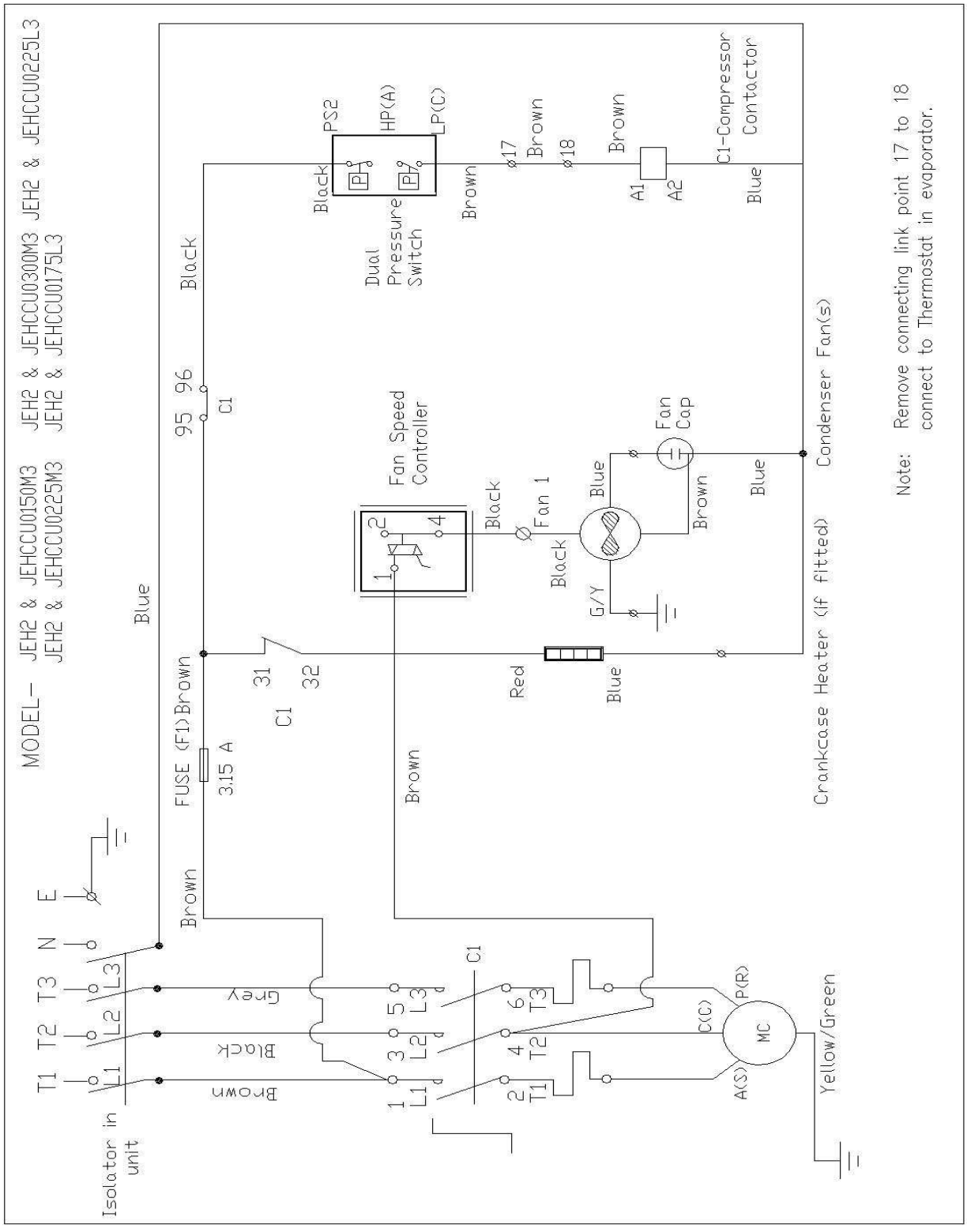
Wiring diagram for models:

JEH2-0150-M-1, JEH2-0175-L-1, JEH2-0225-M /L -1, JEH2-0300-M-1



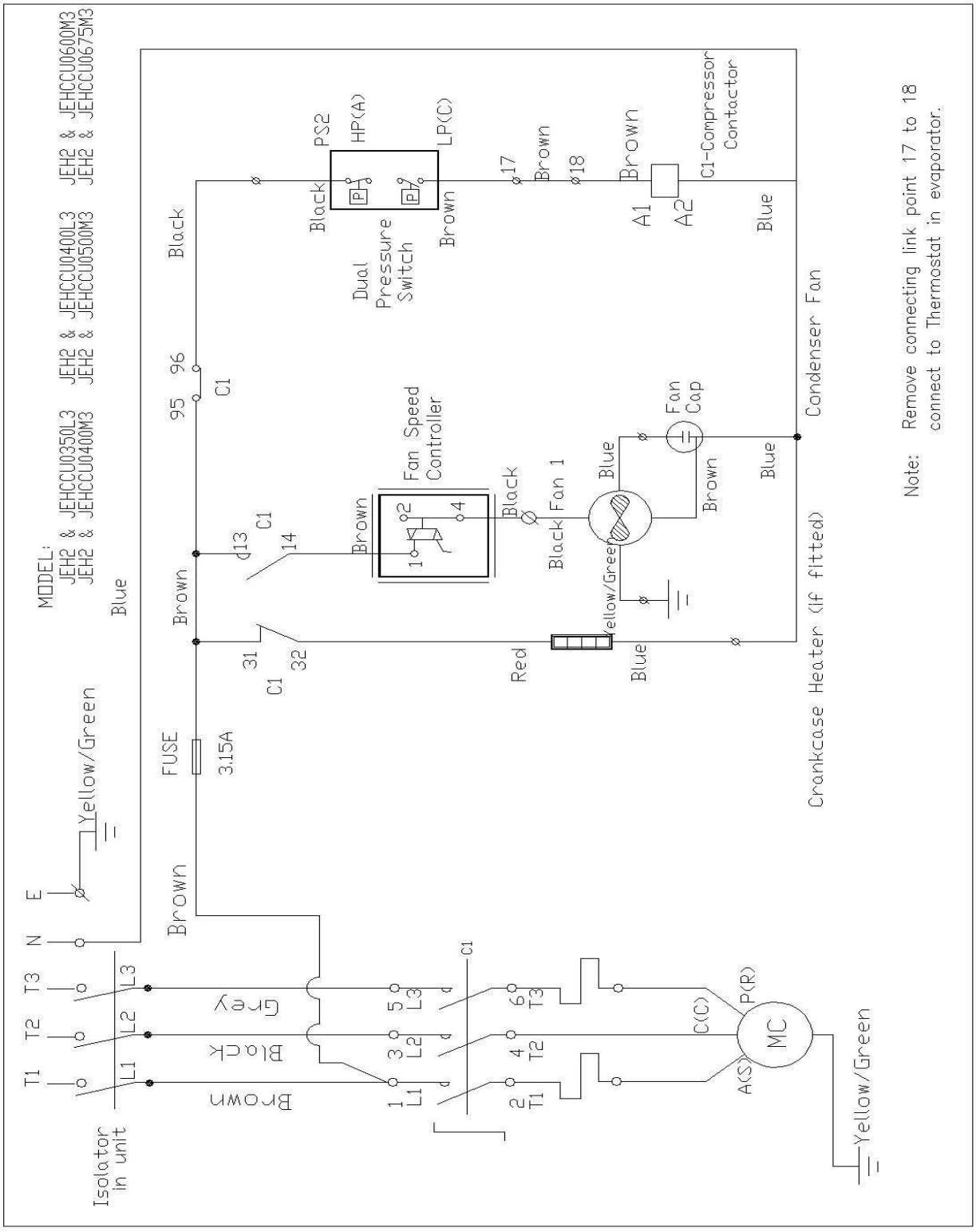
Wiring diagram for models:

JEH2-0150-M-3, JEH2-0175-L-3, JEH2-0225-M /L -3, JEH2-0300-M-3



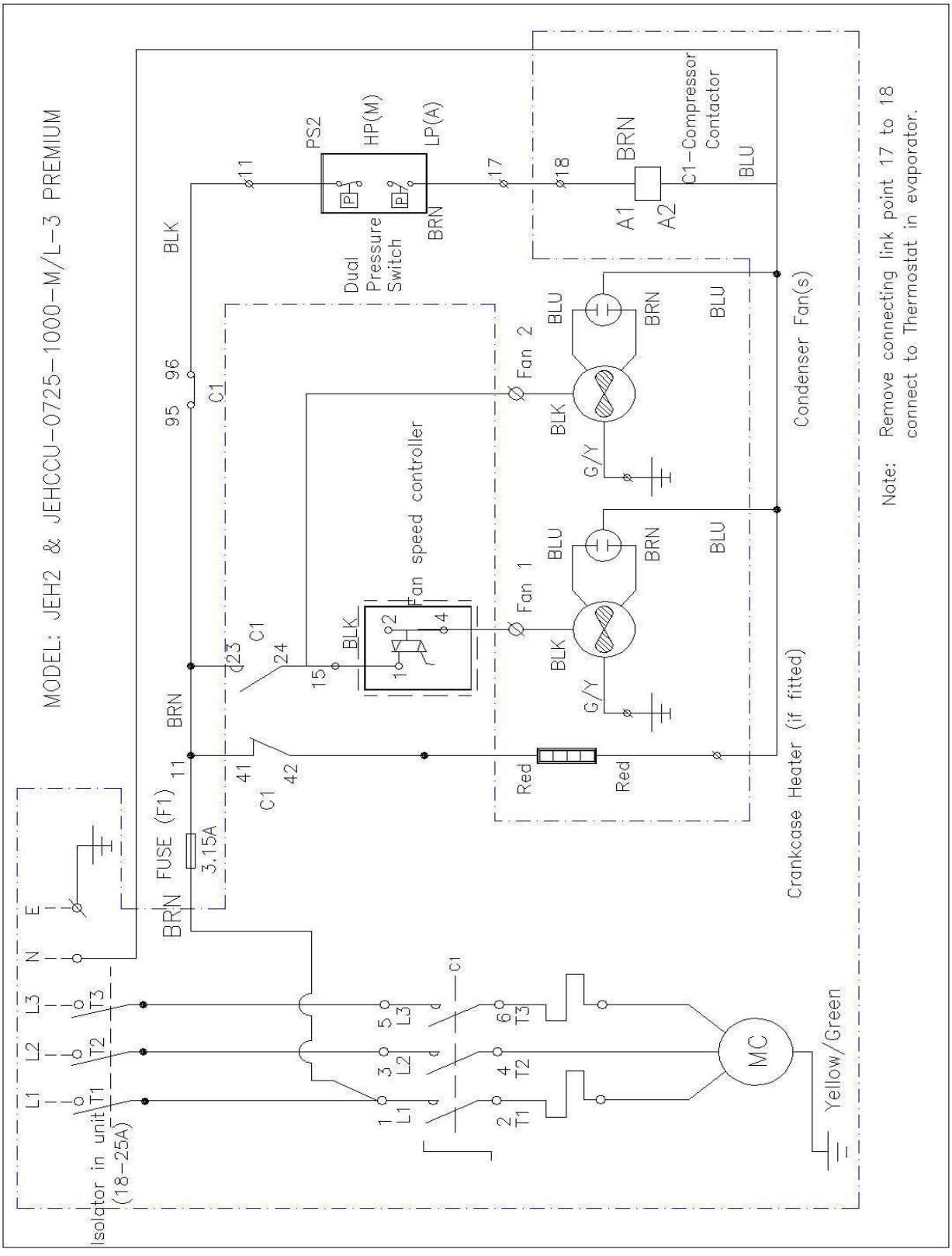
Wiring diagram for models:

JEH2-0350-L-3, JEH2-0400-M/L-3, JEH2-0500-M-3, JEH2-0600-M-3, JEH2-0675-M-3



Wiring diagram for models:

JEH2-0725-L-3, JEH2-0825-M/L-3, JEH2-1000-M-3



Health and Safety

Important Note:

Only a qualified refrigeration engineer, who is familiar with refrigeration systems and components including all controls, should perform the installation and start-up of the system. To avoid potential injury, use care when working around coil surfaces or sharp edges of metal cabinets. All piping and electrical wiring should be installed in accordance with all applicable codes, ordinances and local by-laws.

General information

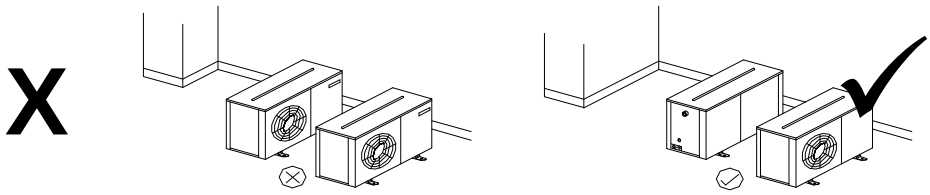
- Ensure the unit received is the correct model for the intended application
- Ensure refrigerant, voltage, MWP, FLC and LRC are all suitable for the proposed application
- Installation and maintenance are to be performed only by qualified personnel who are familiar with local codes and regulations, and experienced with this type of equipment
- The condensing unit contains moving machinery and electrical power hazards, which may cause severe injury or death. Disconnect and shut off power before installation or service of the equipment
- Refrigerant release into the atmosphere is illegal. Proper evacuation, recovery, handling and leak testing procedures must be observed at all times
- Units must be earthed and no maintenance work should be attempted prior to disconnecting the electrical supply
- The electrical covers and condenser fan guards must remain fitted at all times
- Use of the condensing units outside of the design conditions and the application for which the units were intended may be unsafe and be detrimental to the unit, regardless of short or long term operation
- The condensing units are not designed to withstand loads or stresses from other equipment or personnel. Such extraneous loads or stress may cause failure/leak/injury
- In some circumstances, a suction accumulator (not supplied) may be required. It offers protection against refrigerant flood back during operation and also against off-cycle migration by adding internal free volume to the low side of the system
- Tests must be conducted to ensure the amount of off-cycle migration to the compressor does not exceed the compressor's charge limit
- Wherever possible the system should be installed to utilize a pump down configuration
- After installation, the system should be allowed to run for 3 – 4 hours. The oil level should then be checked and topped up as necessary. The oil level should be visible at least ½ - ¾ up the compressor oil sight glass. For details of the oil requirements, please refer to page 18 in the service and maintenance section

Installation

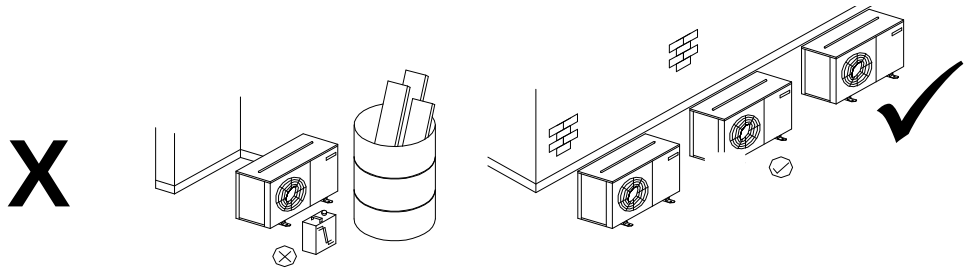
Unit site location

- In order to achieve maximum cooling capacity, the installation location for the condensing unit should be carefully selected

- Install the condensing unit in such a way so that hot air ejected by the condensing unit cannot be drawn in again (short circuit of hot discharge air). Allow sufficient space for maintenance around the unit



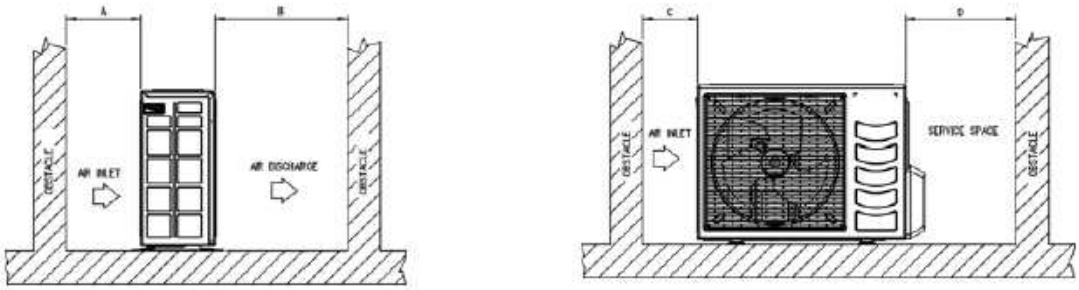
- Ensure that there is no obstruction to air flow into or out of the unit. Remove obstacles which block air intake or discharge



- The location must be well ventilated, so the unit can draw in and distribute plenty of air thus lowering the condensing temperature
- To optimize the unit running conditions, the condenser coil must be cleaned at regular intervals

Installation clearance

- The installation location should allow sufficient space for air flow and maintenance around the unit



ALL MODELS	A	B	C	D
Minimum Distance	300 mm	1000 mm	300 mm	500 mm

Field piping

Important Note:

Line sizing should only be determined by qualified personnel. All local codes of practice must be observed in the installation of refrigerant piping

To ensure satisfactory operation and performance, the following points should be noted for field piping arrangements:

- Pipework routes must be as simple and as short as possible.
- Avoid low points on pipework where oil can accumulate.
- Suction gas velocity must be sufficient to ensure good oil return.
- Use only clean, dehydrated refrigeration grade copper tube with long radius bends.
- Avoid flare type connections and take great care when brazing. Use only silver alloy rods.
- Run braze without over filling to ensure there is no leakage into the tube.
- To prevent oxidation, blow nitrogen through pipework when brazing.
- Install insulation on all suction lines and on all pipes penetrating walls or passing through hot areas.
- Adequately support all pipe work at a maximum of 2 metre intervals.
- In vertical pipework, the use of U-trap and double suction risers is often required. These suction risers must always be fitted with a U-trap at the bottom and a P-trap at the top and never be higher than 4m unless a second U-trap system is fitted.

Correct line sizing will minimize the pressure drop and maintain sufficient gas velocity for proper oil return.

Important Note:

One of the main factors affecting equipment reliability and compressor service life is refrigeration circuit contamination. During installation, circuit contamination can be caused by:

- Brazing & Welding Oxides
- Filings & Particles from de-burring pipework
- Brazing Flux
- Moisture & Air

Installation

Leak detection

- Perform a leak pressure test of the system using oxygen free nitrogen
- The use of leak testing fluids is not recommended as this may interact with the lubricants own additives

Pressure testing

- When running a pressure test, always use an inert, dry gas such as oxygen free nitrogen
- The pressure differential between the high and low side shall not exceed 24 bar (350 psig)
- Maximum test pressures are: **25 Bar (362 psig) on the Low Side.**
  30 Bar (435 psig) on the High Side.

Safety pressure switch settings

The Danfoss KP17 HP/LP pressure switch fitted to JEH model condensing units with auto reset for Low Pressure and manual reset for High Pressure is **NOT** factory preset. Be sure that the high pressure setting does not exceed the receiver's maximum service pressure.

High pressure safety

The high pressure safety switch is required to stop the compressor should the discharge pressure exceed the values shown in the following table. The high pressure switch can be set to lower values depending on the application and ambient conditions

Refrigerant	R404a	R134a	R407c
HP Setting (bar g.)	28	20.2	28
HP Setting (psig)	400	300	400

Source: Maneurop

Low pressure safety

The low pressure safety switch protects the compressor against deep vacuum operation, a potential cause of failure due to internal arching.
The low pressure safety cut out should never be set below 0.1 bar (2 psig) as shown in the following table. For systems without pump-down the LP switch signal contact shall be used to energize a low pressure safety alarm.

Refrigerant	R404a	R134a	R407c
Cut Out (bar)	0.1	0.4	1
Cut In (bar)	1.2	1.2	2

Source: Maneurop

Installation

Important Note:

There must be no more than 12 starts per hour. A higher number reduces the service life of the compressor. If necessary, use an anti-short-cycle timer in the control circuit. A five minute time out is recommended

Vacuum – moisture removal

Important Note:

Moisture prevents proper functioning of the compressor and the refrigeration system

Air and moisture reduce service life and increase condensing pressure causing abnormally high discharge temperatures likely to destroy the oil's lubricating properties. The risk of acid formation is also increased by air and moisture and copper plating can be generated in this way. All these phenomena can cause mechanical and electrical failure.

Important Note:

Ensure that a good quality vacuum pump is used to pull a minimum vacuum of 250 microns (0.33 mbar)

Service & Maintenance

Important Note:

Warning! – Disconnect the mains electrical supply before servicing or opening the unit

The condensing units are designed to give long life operation with minimum maintenance. However, they should be routinely checked and the following service schedule is recommended under normal circumstances:

The removal of the top, side and front panels ensures that all parts are accessible.

1. Compressor – Inspect at regular intervals

- Check for refrigerant leaks on all joints and fittings.
- Ensure that no abnormal noise or vibration is detected during test run.
- Check the compressor oil levels and top up if required. The oil level should be ½ to ¾ way up the sight glass.

Compressor Type	Oil Type	Order Reference
MTZ (Medium Temp)	Ester 160 PZ	N23020046
NTZ (Low Temp)	Ester 160 SZ	N23020066

2. Condenser Fan Motor & Blade – Clean and inspect at regular intervals

- Check for abnormal noise, vibration and fan imbalance.
- Ensure that the fan motor is clean and spins freely.
- Check that the condenser fan blade is clean and free from restriction.
- **Note:** The Fan Motor is pre-lubricated and factory sealed so no maintenance is necessary.

3. Condenser Coil – Clean and inspect at regular intervals.

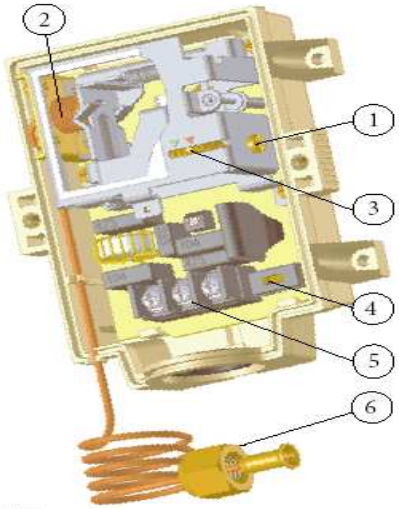
- Check and remove the dirt and debris between the fins using a suitable chemical coil cleaner.
- Check and remove any obstacles which may hinder the airflow through the condenser coil.

4. Power Supply – Inspect at regular intervals.

- Check the running current and voltage for the condensing unit.
- Check the electrical wiring and tighten the wires onto the terminal blocks if necessary.

Technical Information

Fan Speed Controller



Part names:
1. Adjusting screw
2. Bellows
3. Range setting pointer (dual marking 11 and 19bar)
4. Change over switch
5. Terminal board
6. 1/4" flare with depression pin (7/16-20 UNF)

Setting point is increased by turning the range adjusting screw clockwise. It is decreased by turning the screw counter clockwise. Adjustment should be within the range indicated for the setting pointer.

Cut off: Fan motor stops when the pressure decreases below the value Pmin.

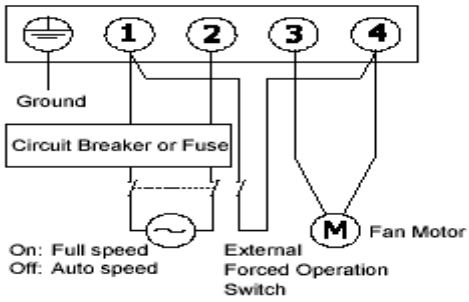
Min. Speed: Fan motor operates at the Minimum Speed when the pressure decreases below the value Pmin.

F.V.S = Full Voltage Set Point (pressure setting for maximum speed)
E.P.B = Effective Proportional Band
Pmin = (F.V.S – E.P.B)

The RGE controls the speed of the condenser fan in refrigeration and air conditioning units that work all year long.

It keeps the condensing pressure at a steady level by changing the speed of the fan according to the required condensing pressure.

4A, 6A, 8A single-phase type

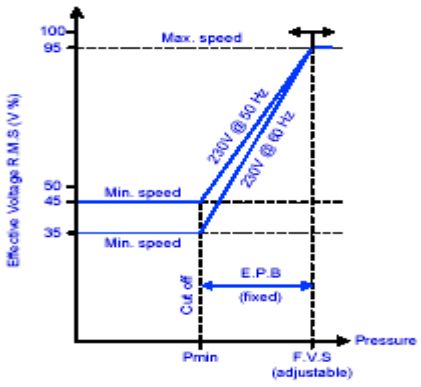


- 4 terminals
- External forced operation switch

On - fan is forced to operate at Maximum speed regardless of the pressure.
Off - fan operates according to the RGE function, with speed varying according to pressure.

For single-phase type, if an external forced operation switch is required, then the switch and connecting cables (not supplied) should have current rating higher than the fan motor rating. For example, a 4A switch is recommended for the 3A RGE model.
For three-phase type, use a forced operation switch with non-voltage contact signal.

Single-phase type



The operating characteristics may vary according to voltage, frequency, and fan motor characteristics

Technical Information

Dual Pressure Switch

Technical leaflet | **Pressure controls, type KP**

Technical data

Ambient temperature
–40 → +65°C (+80°C for max. 2 hours).

DIN-approved units:
–25 → +65°C (+80°C for max. 2 hours).

Max. working pressure
LP: PB = 17 bar
HP: PB = 32 bar
KP 6: PB = 46.5 bar

Max. test pressure
LP: p' = 20 bar
HP: p' = 35 bar
KP 6: p' = 46.5 bar

Contact load
Alternating current:
AC1: 16 A, 400 V
AC3: 16 A, 400 V
AC15: 10 A, 400 V
Max. starting current (L.R.): 112 A, 400 V

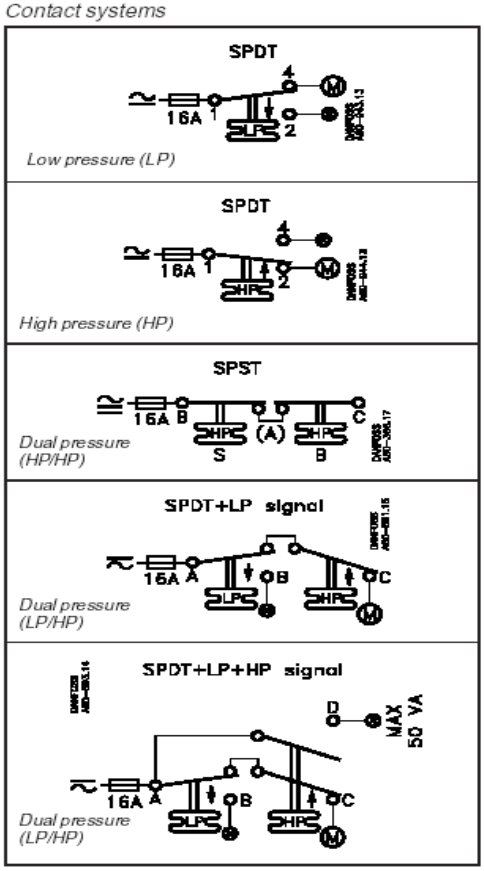
Direct current:
DC13: 12 W, 220 V control current

Properties according to EN 60947:

Wire dimensions	
solid/stranded	0.75 - 2.5 mm²
flexible, w/out ferrules	0.7 - 2.5 mm²
flexible, with ferrules	0.5 - 1.5 mm²
Tightning torque	max. 2 NM
Rated impulse voltage	4 kV
Pollution degree	3
Short circuit protection, fuse	10 Amp
Insulation	400 V
IP	30/44

Cable connection
The cable entry can be used for 6 → 14 mm dia. cables.
A Pg 13.5 screwed cable entry can also be used for 6 → 14 mm cable. With 8 → 16 mm cable a standard Pg 16 screwed cable entry can be used.

Contact systems



Setting

Pressure controls with automatic reset - LP:
Set the LP start pressure on the "CUT-IN" scale (range scale).
One rotation of the low pressure spindle – 0.7 bar.
Set the LP differential on the "DIFF" scale. One rotation of the differential spindle – 0.15 bar.
The LP stop pressure is the LP start pressure minus the differential.

Note:
The LP stop pressure must be above absolute vacuum (p_e = –1 bar)!

If with low stop pressure the refrigeration compressor will not stop, check to ensure that the differential value has not been set too high!

Pressure controls with automatic reset - HP:
Set the HP pressure on the "CUT-OUT" scale.
One rotation of the HP spindle – 2.3 bar.
Set the HP differential on the "DIFF" scale.
One rotation of the differential spindle – 0.3 bar.
The HP start pressure is the HP stop pressure minus the differential.
Start and stop pressures for both the LP and HP sides of the system should always be checked with an accurate pressure gauge.

Pressure controls with manual reset
Set the stop pressure on "CUT-OUT" scale (range scale).
Low pressure controls can be manually reset when the pressure is equal to the stop pressure plus the differential.
High pressure controls can be manually reset when the pressure is equal to the stop pressure minus the differential.

J & E Hall Limited
Hansard Gate
West Meadows
Derby, DE21 6JN
England

Tel: + 44 (0) 1332 253400
Fax: + 44 (0) 1332 371061
Email: helpline@jehall.co.uk
Web: www.jehall.com